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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/831,581	05/15/2001	Chienhsin Kuo	UPA-01149	7042

33804 7590 07/16/2004
SUPREME PATENT SERVICES
POST OFFICE BOX 2339
SARATOGA, CA 95070

EXAMINER

BRANT, DMITRY

ART UNIT PAPER NUMBER

2655

DATE MAILED: 07/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/831,581

Applicant(s)

KUO ET AL.

Examiner

Dmitry Brant

Art Unit

2655

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 May 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-6 is/are rejected.
- 7) ☒ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

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Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3, 5-6 are rejected under 35 U.S.C. 103(a) as being obvious over Royer et al. (4,872,196).

As per claim 1, Royer et al. disclose a method of entering alphabets or phonetic symbols of at least one language, comprising the steps of:

- dividing said alphabets or phonetic symbols into a plurality of groups and assigning each group to a numerical key and labeling the alphabets or phonetic symbols of each group with a predetermined positional sequence on a numerical key corresponding to each group; (columns = groups in a two-dimensional character matrix, **Col. 2, lines 14-32, FIG. 1**)
- entering a desired alphabet or phonetic symbol by first pressing a first numerical key corresponding to the group of the desired alphabet or phonetic symbol, (selecting the column - **Col. 3, lines 35-39**)

Royer et al. do not teach "then pressing a second numerical key whose numerical digit corresponds to the positional sequence of the desired alphabet or

phonetic symbol labeled on the first numerical key." (in other words, explicitly selecting the column of the element by a direct input)

However, the examiner takes the official notice that it is well-known in the art of linear algebra to identify the elements of the matrix by the row/column number. For example, the element X_{ij} belongs to the i th column and j th row (or i th row & j th column, depending on the notation). Here, Royer et al. teach arranging the phonetic elements into the matrix form (**Col. 2, lines 20-33**), and hence, each of the elements of the matrix would necessarily have the designated column and row numbers (i, j).

Therefore, it would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify Royer et al. to access the phonetic elements in each group (column, i) by pressing a second key corresponding to the positional sequence of the desired phonetic symbol (row, j) because this method of accessing elements in a matrix (table) is extremely well-known in the art and would provide the most straightforward and natural access to the elements of the matrix, mainly because people are well-used to specifying the elements in the tables by their i, j positions.

As per claim 2, Royer et al. disclose a method for entering Japanese alphabets and phonetic symbols (**Col. 2, lines 20-33**),

As per claim 3, Royer et al. disclose grouping and assigning numerical keys to phonetic symbols according to their representation with English alphabets (**Col. 2, lines 20-33** - each column represents a separate English alphabet letter)

As per claim 5, Royer et al. do not disclose computing a square root of the total number of symbols in order to determine the minimum number of keys required.

However, Royer et al. disclose arranging the phonetic symbols into a two-dimensional matrix (**Col. 2, lines 20-33**). The examiner takes the official notice that it is extremely well-known in the art that the if the total number of elements were T and we were trying to arrange them into a $N \times N$ matrix (where N is the highest key), then N would naturally be equal to the square root of T . Thus, if we had 49 elements, we would need at most 7 keys to represent the maximum position in the matrix - $X(7,7)$. In case the result of the square root was not an integer, we would simply round it off to the next highest integer (ceiling). These derivations are based on the mathematical properties of the two-dimensional matrices and are extremely well-known to anyone familiar with basic linear algebra, etc.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Royer et al. to calculate the minimum number of keys required using the square-root computation because this is the most basic and obvious mathematical way of computing the desired result for arranging the symbols into a $N \times N$ matrix, and, would also be easy to implement in software or hardware.

As per claim 6, Royer et al. disclose numerical keys arranged in the form of a square/rectangle. (FIG. 1)

Allowable Subject Matter

5. Claim 4 is objected to as being dependent upon a rejected base claim 1, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Neither Royer et al. nor the other prior art teach the method of selecting a language from multiple languages described by the applicant, specifically arranging languages according to their frequencies of use in local area.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Hsiao (5,619,563) teaches phonetic mapping of Chinese characters.

Yang et al. (6,005,498) teach two-press keypad method

Chen (6,054,941) teaches a method for inputting ideographic characters.

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Kushler et al. (6,646,573) teach specifying Japanese characters using two-key input method.


7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dmitry Brant whose telephone number is (703) 305-8954. The examiner can normally be reached on Mon. - Fri. (8:30am - 5pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Talivaldis Ivars Smits can be reached on (703) 306-3011. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to Tech Center 2600 receptionist whose telephone number is (703) 305- 4700.

DB

7/06/04



W.R. YOUNG
PRIMARY EXAMINER